# Modeling the Infrared Emission from the LkH$\alpha$ 234 Disk

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LkH$\alpha$ 234, a very young (with an age of $\sim$ 0.1 Myr and spectral type of B5) Herbig Be star at a distance of $\sim$ 1250 pc, is receiving much attention because of its large infrared excess and the recent possible detection of planetesimal infalling activity (*Chakraborty, Ge, and Mahadevan*, 2004). In this talk we will present results from our recent efforts of modeling its dust thermal emission from the mid-infrared to submillimeter in terms of a porous dust model. This model has previously been successfully applied to prototypical protoplanetary and debris disks such as $\beta$ Pictoris, $\epsilon$ Eridani, Fomalhaut, Vega, HR 4976A, and HD 141569A. Here we will show that this model is also successful in reproducing the observed mid-IR to submillimeter spectral energy distribution of the LkH$\alpha$ 234 system. The dust to stellar mass ratio is estimated to be $\sim$ 0.05. Whether or not disks around young massive stars evolve much faster than those around less massive young stars, such as Herbig Ae stars and T Tauri stars, will be discussed. We attribute the large excess at 10 $\mu$m to transiently heated ultra-small grains (e.g., PAHs) and/or an inner warm "zodiacal dust" component or warm dust associated with its heavily embedded companion.

[a] Chakraborty, A., Ge, J., and Mahadevan, S., Evidence of Planetesimal Infall onto the Very Young Herbig Be Star LkH$\alpha$ 234, *ApJ*, **606**, L69–L72, 2004.